



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

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OFFICE OF
SOLID WASTE AND EMERGENCY
RESPONSE

MEMORANDUM

SUBJECT: CERCLA Hazardous Substances – Status of Phosphorous, Nitrogen, and their Compounds

FROM: Deborah Y. Dietrich, Director
Office of Emergency Management

Mike Cook, Director
Office of Superfund Remediation & Technology Innovation

TO: Superfund National Policy Managers, Regions I-X

Purpose

The purpose of this memorandum is to provide you with guidance on what constitutes a *hazardous substance* under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) in certain instances. Of particular interest is whether phosphorous, nitrogen, and their compounds are *hazardous substances* under CERCLA.

CERCLA Hazardous Substances

CERCLA defines *hazardous substances* by reference to other environmental statutes¹ and allows the Agency to designate additional hazardous substances. Important provisions of CERCLA, including §107 on liability and §106 on reporting, apply only to hazardous substances. CERCLA also defines *pollutant or contaminant*.²

¹ Those statutes are: FWPCA §311, SWDA §3001, FWPCA §307, CAA §112, and TSCA §7.

² That definition includes, but is not limited to, "any element, substance, compound, or mixture, including disease-causing agents, which after release into the environment and upon exposure, ingestion, inhalation, or assimilation into any organism, either directly from the environment or indirectly by ingestion through food chains, will or may reasonably be anticipated to cause death, disease, behavioral abnormalities, cancer, genetic mutation, physiological malfunctions ... or physical deformations, in such organisms or their offspring." Petroleum, including crude oil or any fraction thereof which is not otherwise specifically listed or designated ... And natural gas, liquefied natural gas, or synthetic gas of pipeline quality (or mixtures of natural gas and such synthetic gas) are excluded from the definitions of "hazardous substance" and "pollutant or contaminant."

Phosphorous and Nitrogen and their Compounds

EPA codified the list of hazardous substances at 40 C.F.R. §302.4, including Table 302.4. Section 302.4 generally lists chemicals with their Chemical Abstract System Registry Number (CASRN). Elemental phosphorous, CASRN 7723-14-0, several phosphorous compounds, and several nitrogen compounds are listed. However, elemental nitrogen is not listed, and there are no listings for phosphorous compounds generally, or nitrogen compounds generally.

Conclusion

Elemental phosphorous and specific phosphorous and nitrogen compounds are listed hazardous substances. Elemental nitrogen, and phosphorous and nitrogen compounds other than those listed are not hazardous substances.

If you have any questions about regarding the interpretation of the CERCLA hazardous substance list, please contact Lynn Beasley at (202) 564-1965 or beasley.lynn@epa.gov.

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